

**REMARKS**

Reconsideration of this application is requested. Claims 1-37 remain active in the application. While applicants kindly appreciate the examiner's indication of allowability of claims 4, 7, 31 and 34, they also believe that the remaining claims in this application define patentable subject matter, that is an invention that is both distinct from and patentable over the disclosure of the single cited reference. The reasons for this belief are discussed in more detail below.

Claims 1 and 2 have been amended responsive to item 2 of the Official Action, namely claim 1 is revised to use "comprising" terminology and claim 2 amended to use "consists of" terminology thus rendering claim 2 as further defining the subject matter of claim 1.

Regarding claims 6 and 7, it appears that in the Amendment filed June 27, 2001 the previous Preliminary Amendment was overlooked as regards dependencies of claims 6 and 7. Claims 6 and 7 are now amended to agree with the dependency from claim 1 (only) as in the first Preliminary Amendment.

In item 4 of the Official Action, the examiner criticizes claims 24 and 36 for use of the term "hard". In fact, the expression refers to "a hard coating agent" which is among the various choices or embodiments of the layers described at page 5, lines 22-28 of the specification. In context of these terms, the expression "hard coating agent" is apt and serves to further define and describe various embodiments of the invention and is featured in claims 34, 35 and 37, for example. In any event, in order to advance prosecution the "hard" term objected to has been removed from claims 24 and 36.

This leaves for consideration the rejections stated in items 7-11 of the Official Action based upon JP 8-283425A which for convenience hereinafter is referred to as "reference".

In item 8 of the Official Action, claims 1-3, 10-12, 14-29 and 32 are rejected as allegedly being anticipated by the cited document; reasons in support of the rejection are offered.

In item 10 of the Official Action, claims 6, 8, 9, 30, 33 and 35-37 are rejected as either being anticipated by or "obvious" over the cited document; reasons in support of this rejection are also offered. Finally, in item 12 of the Official Action, claims 5, 13, 30, 33 and 35-37 are rejected as allegedly being "obvious" over the disclosures of the reference; again reasons in support of the rejection are offered.

From information only recently available it appears that the examiner has been hampered in his review of the claims of this application by a defective English translation of the underlying document relied upon.

It is applicants' position the organic-inorganic composite graded material according to the present invention is completely different from the component inclination complex disclosed in the reference and therefore the various rejections are unfounded.

As clearly defined in claim 1, as amended in the second Preliminary Amendment of June 27, 2001, the organic-inorganic composite graded material of the present invention is characterized in that an organic polymer compound and a metallic compound are chemically bonded to each other.

The Official Action argues in paragraph 8 that Kazutoshi et al (reference) describe a material that comprises an organic macromolecule and a metal oxide bonded together by hydrolysis and polycondensation (underline added for emphasis). Applicants cannot agree with the examiner's statements which appear to be based upon a faulty translation of the applied prior art document.

When correctly understood, in the component inclination complex disclosed in the reference the organic macromolecule and the metal oxide are never bonded together but they exist only as a mixture thereof. This is supported in the following passages of the reference.

Paragraphs 24 and 25

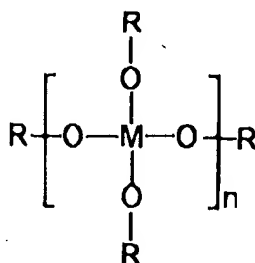
The computer translation of the reference provided by the Japanese Patent Office is imperfect and applicants' translation<sup>1</sup> of paragraphs 24 and 25 is given below.

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<sup>1</sup> These passages were prepared by a native Japanese speaker and are believed to be accurate.

[0024] In the process for the production of the component inclination complex according to the present invention, a metallic-oxide component is formed in a dispersed state by hydrolysis and polycondensation of a metal alkoxide under existence of an organic macromolecule. The particularly preferred metal alkoxide is represented by the general formula I.

[0025] (General Formula I)



(in the formula, M is a Si atom, R is  $\text{C}_n\text{H}_{2n+1}$ , m is an integer of 1 to 4 and n is an integer of 1 to 10)

As is clear from the above translation, in the process disclosed in the reference, the metal alkoxide itself is allowed to react in the presence of the macromolecule to form the metallic oxide which is dispersed in the macromolecule. The macromolecule does not participate in the reaction.

As is clear from paragraph 32 of the reference, the examples of the macromolecule are phenol resin, epoxy resin, acrylic resin, alkali resin, etc. which insofar as applicants are aware do not form a chemical bond with the metallic oxide.

As mentioned above, the reference only discloses the component inclination complex in which the metallic oxide and the macromolecule exists as a mixture thereof.

In contrast to this "mixture" disclosure, the organic-inorganic composite graded material of the present invention is characterized in that the metallic compound and the organic polymer compound are **chemically bonded** to each other.

Therefore the claims of the present application are neither anticipated by nor obvious over the reference.

From the above discussion it will be apparent that claims 1-3, 10-12, 14-29 and 32 are in no way anticipated by the "mixtures" disclosures of the cited document. Similarly, claims 6, 8, 9, 30, 33 and 35-37 are in no way anticipated by nor rendered obvious over the "mixtures" disclosure of the cited . Finally, claims 5 and 13 are neither described by nor suggested in the "mixtures" disclosure of the cited document.

For completion of the record, the same reference cited by the examiner was cited during Preliminary Examination in the International Phase of the present application. Applicants made the same arguments as above in their reply to the reviewer's Written Opinion and the PCT examiner has issued a International Preliminary Examination Report (IPER) that the claims were novel and had inventive step over the disclosures of the Kazuotoshi et al reference as applied in the current Official Action.


For the above reasons it is respectfully submitted that the claims of this application define inventive subject matter. Reconsideration and allowance are solicited.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page(s) is captioned "**Version With Markings To Show Changes Made.**"

Respectfully submitted,

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS**

1. (Twice Amended) An organic-inorganic composite graded material which is an organic-inorganic composite material [containing] comprising a composite in which an organic polymer compound and a metallic compound are chemically bonded to each other, and having a component-graded structure in which the content of the metallic compound in the material continuously changes in the depth direction from the surface of the material.

2. (Twice Amended) The organic-inorganic composite graded material of claim 1, wherein the organic-inorganic composite material [is] consists of a composite in which the organic polymer compound and the metallic compound are chemically bonded to each other.

6. (Twice Amended) The organic-inorganic composite graded material of claim [3 or 5] 1, wherein the composite in which the organic polymer compound and the metallic compound are chemically bonded to each other is a hydrolysis product from a mixture of the organic polymer compound having a molecule containing a metal-containing group capable of bonding to a metal oxide by hydrolysis with a metal compound capable of forming a metal oxide by hydrolysis.

7. (Twice Amended) The organic-inorganic composite graded material of claim [4 or 5] 1, wherein the composite in which the organic polymer compound and the metallic

compound are chemically bonded to each other is a hydrolysis product from a mixture of the organic polymer compound having a molecule containing a metal-containing group capable of bonding to a metal nitride polymer by hydrolysis with a metal nitride polymer.

24. (Amended) The coating agent of claim 21, wherein the coating layer containing at least an inorganic or metallic material is a [hard] coating layer containing an inorganic or metallic material.

36. (Amended) The article of claim 33, wherein the coating layer containing at least an inorganic or metallic material is a [hard] coating layer containing an inorganic or metallic material.